

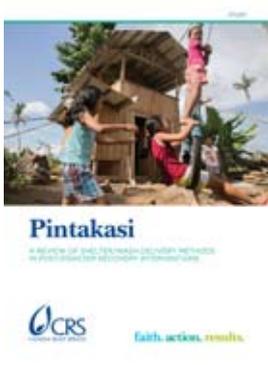


Pintakasi

A REVIEW OF SHELTER/WASH DELIVERY METHODS
IN POST-DISASTER RECOVERY INTERVENTIONS



faith. action. results.



Cover

Children of CRS shelter beneficiaries play in front of a home built using CRS' cash-for-shelter approach and "build back safer" techniques. The family combined their CRS cash grant for shelter with additional money they earned from selling vegetables, part of a CRS livelihoods project. Using both sources of funding they were able to construct a sturdy house that sleeps 11 people. Photo by Jen Hardy/CRS

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Catholic Relief Services is the official international humanitarian agency of the United States Catholic community. CRS' relief and development work is accomplished through programs of emergency response, HIV, health, agriculture, education, microfinance and peacebuilding. CRS eases suffering and provides assistance to people in need in more than 100 countries, without regard to race, religion or nationality.

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ACRONYMS

ABR	anaerobic baffled reactor
BBS	build back safer
BOQ	bill of quantity
BOM	bill of materials
CHB	concrete hollow block
CGI	corrugated galvanized iron
CMP	community mortgage program
CRS	Catholic Relief Services
DZ	dwell zone
FGD	focus group discussion
GI	galvanized iron
HP	hygiene promotion
KII	key informant interview
MEAL	monitoring, evaluation, accountability and learning
MOA	memorandum of agreement
NDZ	no-dwell zone
NHA	National Housing Authority
PhATS	Phased Approach to Total Sanitation
PHP	Philippine peso
SAD	safe, adequate and durable
UNICEF	United Nations Children's Fund
WASH	water, sanitation, and hygiene



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EXECUTIVE SUMMARY

Catholic Relief Services conducted an in-depth study to assess the efficiency, effectiveness and appropriateness of the modalities for delivering shelter and WASH assistance in its Typhoon Haiyan Recovery Program. This study, *Pintakasi*¹, hopes to contribute valuable lessons learned and share best practices from the program with the shelter/WASH recovery communities of practice in the humanitarian sector as a whole.

CRS conducted 26 focus group discussions with 115 beneficiaries and 90 staff, as well as 8 key informant interviews with senior management in the municipalities of Tacloban, Palo and Samar, Philippines. The main objectives of the study were to:

- Document decisions, implementation obstacles and risk-mitigation strategies
- Understand beneficiary preference
- Provide a comparison between the cash-transfer and direct-build approaches

The study focused on the efficiency (time, cost, quantity/scale), effectiveness (quality, beneficiary satisfaction) and appropriateness (vulnerability, dignity) of a cash-based approach to delivering shelter/WASH solutions, compared to in-kind/direct-build construction, in the context of recovery after Typhoon Haiyan.

Findings

The relative effectiveness of different modalities depended heavily on contextual factors such as the functioning of markets, availability of trained labor, capacity of the organization, emergency phase versus recovery phase, and availability of secure in-country money transfer systems. Key findings of the study include:

1. It is very important for beneficiaries to have a *choice* between cash transfer and direct build. The provision of options allowed for the contextual needs of each beneficiary to be met. This also assured a higher rate of beneficiary satisfaction, since they had a greater choice of the delivery method.
2. Beneficiary preference aligned with the type of modality they received (direct build or cash transfer). In the direct-build FGDs, all beneficiaries said they preferred direct build and responded that they would not change their decision to a cash transfer since it was the best approach for their situation. All cash transfer beneficiaries who participated in the FGDs thought cash transfer was the best approach because they were able to choose quality materials to ensure a durable, high-quality home.
3. Cash transfer was a more cost-efficient approach for this response. For every \$100 spent on the beneficiary, it cost \$18.50 for CRS to deliver the cash-transfer approach against \$23 to deliver using the direct-build approach. This difference was primarily due to the time it took to procure materials for thousands of beneficiaries in the direct-build approach.

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This study hopes to contribute valuable lessons learned and share best practices from the program to the shelter/WASH recovery communities of practice within the humanitarian sector as a whole.
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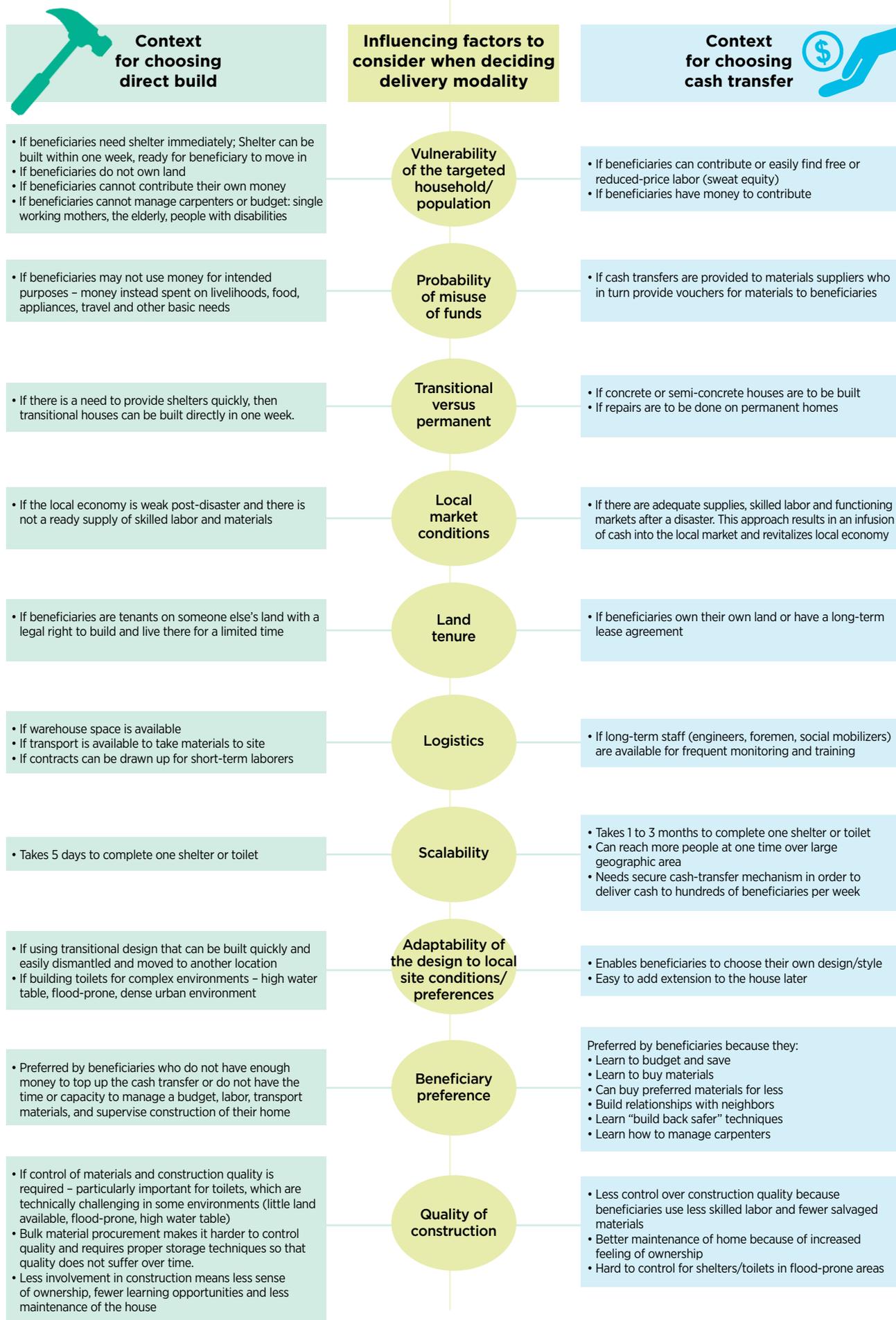
1. *Pintakasi* is the Waray Waray word for “community action”.

4. Cash transfer was a more cost-effective approach when the unit costs, completion of targets, and dropouts were compared for each approach. Per unit, CRS spent less on shelters and toilets using a cash-transfer approach than using direct build. CRS was able to complete all 20,000 targeted shelters and toilets within 20 months over a large geographic area largely due to the scalability of the cash-transfer approach. For every \$100 spent using the cash-transfer approach, 97 percent was used by beneficiaries to build shelters and toilets. An average of \$3 (or 3 percent) of every \$100 spent delivering cash transfers did not get invested into shelter and toilet construction by beneficiaries. In these cases, beneficiaries did not comply with the requirements to receive subsequent cash transfers, or “tranches”, and therefore did not complete the program. Findings suggest that the overall cost effectiveness of the completed targets would have been greater if a cash-transfer approach had been used rather than a mixed-methods approach.
5. Effective social mobilization is key to the success of the cash-transfer approach, and significant human resources should be dedicated to social mobilization when employing this approach.
6. Environmental site assessments (collecting data on the highest seasonal flood levels, water table, and soil type) should be conducted before implementation of any cash-transfer or direct-build program so that guidance and training on the most resilient shelter and toilet designs can be given to engineers, foremen, carpenters and beneficiaries during pre-construction meetings before the first cash transfer is released.

Based on the findings of this study, CRS has developed a decision-making tool to help practitioners decide which approach will be most appropriate, effective, and efficient depending on which influencing factors are at play. See following page.



Recommendations on which approach to use



INTRODUCTION

On November 8, 2013, Super-typhoon Haiyan (locally named “Yolanda”)—one of the largest Category 5 storms ever recorded—made landfall in the Philippines. Haiyan devastated many provinces, destroying homes, roads, airports, ports, markets, health facilities, telecommunications and water supplies. Damages were estimated at over \$15 billion.² Over 12 million people were affected, of whom 4 million were displaced and over 6,000 killed. Nationwide, the livelihoods of 5.6 million people were destroyed or disrupted. Despite the frequency of natural disasters in the Philippines, local government authorities and non-governmental organizations were unprepared for the unprecedented scale of the destruction.

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Typhoon Haiyan destroyed homes, roads, airports, ports, markets, health facilities, telecommunications and water supplies.
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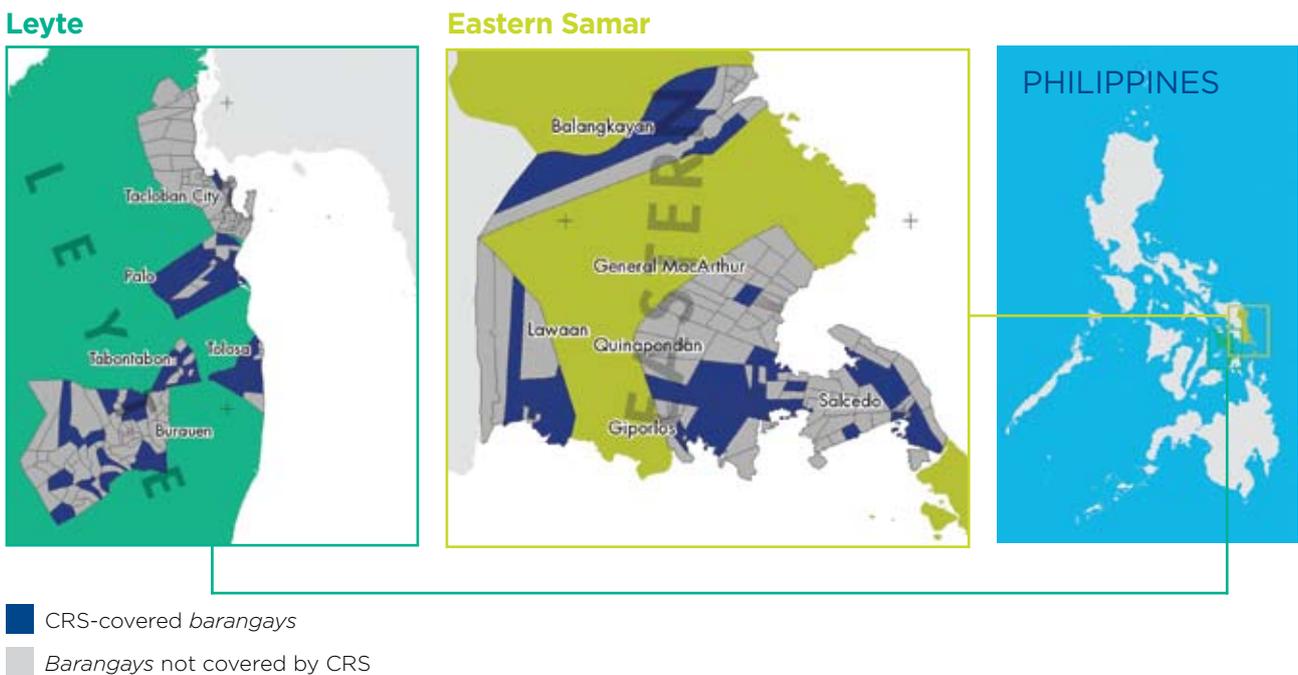
CRS targeted 20,000 families for household shelter, and 23,000 families for household sanitation reconstruction or repair. It supported market-based solutions in shelter by giving conditional cash transfers to those families able to rebuild on their own. For CRS, the Typhoon Haiyan Integrated Shelter/WASH Recovery Program was one of the largest post-disaster responses to use the cash-transfer modality for shelter and toilet construction. This report documents those important lessons learned.

PROGRAM DESIGN

a. Geographic coverage and targets

Geographically, the response concentrated efforts in 11 municipalities of Leyte and Eastern Samar. In Leyte, these municipalities were Tacloban, Palo, Burauen, Tolosa, and Tabontabon. In Eastern Samar, the targeted municipalities were Salcedo, Quinapondan, Lawaan, Balangkayan, General MacArthur and Giporlos.

Figure 1: Map of supported barangays³ in CRS Typhoon Haiyan Integrated Shelter/WASH Recovery Program

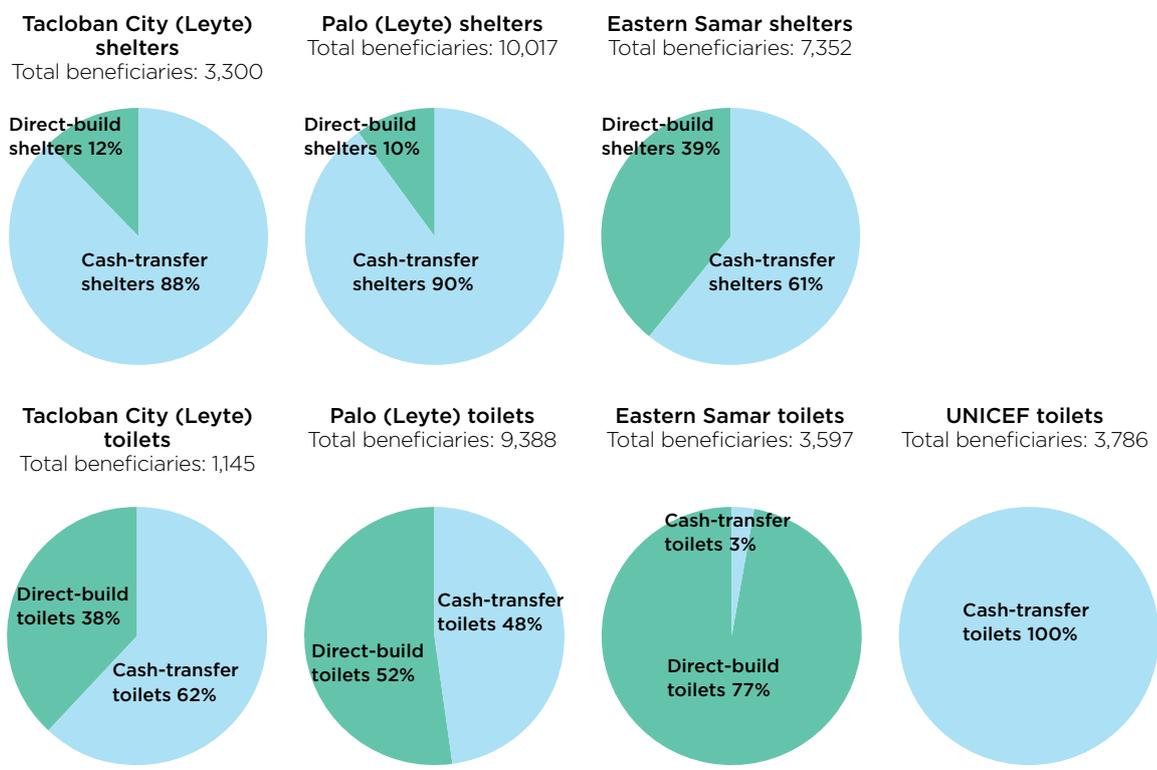


2. *The Economist*. 'Typhoon Haiyan: Worse than hell'. November 13, 2013.

3. A *barangay* is a district in the Philippines. A *purok* is a zone within a *barangay*.

CRS' entire response targeted 20,000 families for shelter and 23,000 for WASH assistance.

Figure 2: Percentage of shelters and toilets delivered using cash transfer or direct build by geographic area



b. Strategic approach

Early on, the rate of self-recovery at families' points of origin was rapid: Families used emergency shelter items and salvaged materials to create livable space, but in poor sanitary conditions. As each family was affected differently, CRS developed tailor-made support categories, depending on the post-Haiyan household-level infrastructure damage assessment, which categorized damaged homes into four categories: total damage, major repair, minor repair, or roof only. The self-recovery support included a combination of technical assistance for construction, cash, and selected material inputs.

Direct-build support for the most vulnerable

Not all families were able to recover on their own. The poorest households had few salvageable materials and did not have the financial resources to buy materials or hire laborers. For these extremely vulnerable households, a direct-build support package was offered. This group included female-headed households, people with disabilities, the elderly or families with very young children. The complete shelter package offered materials, labor, and technical assistance. CRS offered three types of direct-build styles.

.....
As each family was affected differently, CRS developed four tailor-made support categories.

The three direct-build shelter options



Left: The Pablo style (named after Typhoon Pablo which hit the island of Mindanao in 2012) is elevated 0.6 meters above the ground with a concrete footing and uses woven bamboo mats (known locally as *amakan*) for walling.



Above: The Taklub—from the Waray Waray word *Tarakluban*, Tacloban City’s old name—was developed during this response and is a two-story model with a kitchen, adapted from the Pablo elevated style. *Taklub* is fishing gear used by fishermen and, in the local dialect, means “cover”. Left: The Bohol (named after the earthquake which hit the island of Bohol in 2013) has a 0.6-meter base made from concrete hollow blocks and walls made from *amakan*.



The direct-build option—delivering shelter materials and providing skilled labor under the supervision of CRS engineers—was also used if local markets were not conducive to market-based solutions or if road accessibility was limited. Carpenters and foremen were trained in disaster-resilient construction techniques based on safe, adequate and durable shelters⁴. These included eight “build back safer” principles for the construction or repair of each shelter and/or toilets included guidance on site construction, shape, foundations, tie-down, bracing, joints, roofing, and preparedness.

4. “Safe” is defined as being when beneficiaries report feeling safe from flooding, earthquakes and typhoons (up to Category 2) in their new/ repaired house. “Adequate” is defined as being when the new/repaired shelter has adequate space for all members of the family and accommodates the mobility requirements of any vulnerable people in the household. “Durable” is defined as being when the shelter will remain standing for four years if no major typhoon hits the area, and when the shelter is easily extendable and upgradable.

Direct-build toilet designs

CRS also provided the direct-build modality for all beneficiaries whose toilets were totally damaged during the typhoon or when they had not had a toilet pre-typhoon. Based on environmental site conditions, CRS worked with the CRS humanitarian response department's global technical advisor for WASH to design four types of toilets (chosen out of eight recommended designs by the Global WASH Technical Advisor) that were suitable for flood-prone, high water table, high population density conditions. After detailed environmental site assessments were conducted at each qualifying household, CRS engineers assigned each household with a toilet design with appropriate septic tanks and sub-soil infiltration systems.

.....
CRS worked with the CRS humanitarian response department's global technical advisor for WASH to design four types of toilets that were suitable for flood-prone, high water table, high population density conditions.
.....



Left: The Type 6 toilet and septic tank is for households whose groundwater level is higher than 0.65 meters from the natural ground.

Below: The Type 7 toilet and septic tank is for households whose groundwater level is between 0.65 and 1.5 meters from the natural ground.



Above left: The Type 8 toilet and septic tank is for households whose groundwater level is below 1.5 meters from the natural ground. Above right: Anaerobic baffled reactors⁵ were used for clusters of households where there was not enough space to build individual septic tanks.

5. Anaerobic baffled reactors (ABRs) are improved septic tanks that use baffled walls to help channel the water through active sludge resulting in improved wastewater treatment. CRS partnered with the Bremen Overseas Research and Development Association to manufacture ABRs using fiber-reinforced plastic so that they were portable and could withstand a high water table and flood-prone conditions

Cash-transfer approach

In February 2014, CRS conducted a pilot of the cash-transfer approach using a money transfer agency called Palawan Express, available in most towns in the Philippines. To explore shelter strategies that would also benefit local markets, CRS conducted a cash-transfer pilot study that enabled program participants to buy shelter materials and hire workers themselves. CRS trained the participants in disaster-resilient construction techniques and required that they demonstrate completion of each phase according to the construction techniques before the next cash disbursement was made.

.....
To explore shelter strategies that would also benefit local markets, CRS conducted a cash-transfer pilot study that enabled program participants to buy shelter materials and hire workers themselves.
.....

Learning from this pilot, CRS employed a cash-transfer approach that allowed beneficiaries to buy their own materials and hire their own skilled labor to reconstruct or repair their shelters. Beneficiary preferences in design and quality or type of materials were taken into consideration in this approach. All cash-transfer beneficiaries also received material including corrugated iron sheets, plain iron sheets and toilet bowls. CRS bought CGI and plain GI sheets in international bulk shipments due to the lack of market production and supply capacity in the country. CRS supplied sheets of 0.44mm in thickness to all beneficiaries to ensure the durability of the shelters.

The cash transfer was disbursed in two to three tranches (depending on the category of assistance) using a clustering system in which 10 households self-selected into groups. Each group was required to complete each stage of construction before it was eligible to receive the next cash tranche. Before receiving the first disbursement, beneficiaries had to provide proof of residency and attend trainings on “build back safer” principles and hygiene promotion.

CRS foremen and engineers confirmed debris clearance, concrete footing and wooden column completion, beam and truss attachment and septic tank repair before the second tranche was received. They confirmed completion of the flooring, walls, roofing and toilet superstructure before the third tranche was received. For final handover of the shelter and toilet, CRS foremen and engineers checked the installation of the doors/ windows, septic tank, and then provided a Certificate of Completion signed by a representative of CRS and the family. This process ensured accountability and promoted collaboration in communities. It also supported local economies by enabling people to hire local labor and material providers.



Amounts awarded to households by category of shelter assistance



Households with “totally damaged” homes received \$697 to rebuild their homes.



Households with “major damage” received \$697 to rebuild their homes.



Households with “minor damage” received \$423 to rebuild their homes.



Households with “roofing only” damage received \$423 to rebuild their homes.



“Apartment rental” households received \$1,520 to rent an apartment for two years.



“Host family” households received \$1,520 to pay a host family for a room in their home for two years.



Amounts awarded to households by category of toilet assistance



“Major damage” households received \$211 to rebuild their toilets.



“Minor damage” households received \$143 to rebuild their toilets.



“Vent pipe only” households received \$21 to improve their toilets.

Phased approach to total sanitation

In CRS' UNICEF-funded program areas, cash transfers were given for toilet construction. In line with UNICEF's Phased Approach to Total Sanitation (PhATS), cash transfers or "subsidies" are intended to subsidize materials for the construction of toilets. Ground excavation for septic tanks, transportation of materials and actual construction were all implemented by beneficiary counterparts as a form of promoting beneficiary learning and ownership. Beneficiaries were grouped into clusters and a cluster leader was identified who was responsible for monitoring the group's progress. A cluster was only cleared to receive the next tranche if all of its members were able to complete the construction checklist of the previous tranche. CRS engineers constructed a demonstration toilet in each *barangay*, showcasing the correct way to construct a septic tank.



CRS UNICEF beneficiaries received \$89 in materials and \$196 to build toilets.

The CRS UNICEF cash transfer amount was less than in other areas because of the restrictions on the UNICEF cash subsidy amount to households and the rural nature of the CRS UNICEF target areas. This project had a strong social preparation component in order to encourage contributions of cash and labor from the households.

Relocation shelter

CRS customized a "menu of options" for beneficiaries who were not able to rebuild or repair their houses in their original location because they were living in a government declared "no-dwell zone" (15 percent of total overall Haiyan response target but 83 percent or 2,557 households in the Tacloban target population). The "no-dwell zone" policy prohibited rebuilding of shelters near waterways, 40 meters from the sea, or 10 meters from inland waterways in certain municipalities. Options included land rental subsidies with full shelter and toilet (either individual plots of land or with a group), apartment rental subsidies, or host family subsidies enabling families to live with a family member or friend in a safe location. As part of the land rental option, CRS developed four transitional relocation sites close to the beneficiaries' *barangays* of origin so as to minimize disruption to their livelihoods, their children's education and their existing social support system.

.....
CRS engineers constructed a demonstration toilet in each *barangay*, showcasing the correct way to construct a septic tank using mock-ups and actual model construction.
.....

.....
83%
OF TACLOBAN BENEFICIARIES COULD NOT BUILD THEIR HOMES IN THEIR ORIGINAL LOCATIONS AS THESE WERE IN THE GOVERNMENT-DESIGNATED "NO-DWELL ZONE" DEEMED TOO CLOSE TO THE SEA OR TO WATERWAYS
.....

The transitional relocation sites also included a full package of potable water from tap connections, electricity, rainwater drainage, rainwater collection gutters and barrels, and community spaces (basketball courts, playgrounds and multi-purpose halls).



CRS directly built shelters in four transitional relocation sites. Many households have already extended or modified the direct-build designs to fit their needs and preferences.

Integrated shelter and WASH approach

In most communities, construction or repair of household sanitation was integrated with shelter activities. A typical toilet was composed of a ceramic pour-flush bowl connected to a septic tank. Since rebuilding infrastructure was necessary but not sufficient to protect communities, CRS provided targeted hygiene messaging to facilitate critical behavior change.

The project was intended to be an integrated shelter/WASH intervention with a cash transfer methodology to support both interventions simultaneously. However, CRS changed the approach for toilets, halfway through implementation, from cash transfer to direct build, to ensure quality. Instead of cash transfers for a totally damaged or non-existent toilets, CRS offered four types of direct-build household toilets and septic tanks that were assigned by engineers depending on the environmental site-assessment results. The cash-transfer methodology was only used for the repair of toilet superstructures. In the UNICEF-supported areas, however, cash and materials were provided to households to build toilets and septic tanks.

c. Categories of assistance

CRS engineers, foremen and enumerators conducted a detailed damage assessment of each qualifying beneficiary. Based on this, beneficiaries were assigned a category of assistance which had a set of cash and material entitlements delivered in two or three cash tranches.

Table 1: Categories of assistance for households in a dwell zone

	SHELTER				
	Totally damaged	Major damage	Minor damage	Roof sheet repair only	
	A	B	C	R	
CASH TOTAL	\$696	\$696	\$422	\$422	
TRANCHE 1	16,500 PhP	16,500 PhP	10,000 PhP + CGI	10,000 PhP + CGI	
TRANCHE 2	13,100 PhP + CGI	13,100 PhP + CGI	10,000 PhP	10,000 PhP	
TRANCHE 3	3,400 PhP	3,400 PhP	Not applicable	Not applicable	
MATERIALS TOTAL	<ul style="list-style-type: none"> • CGI (20 pc) • Plain sheet (2 pc) 	<ul style="list-style-type: none"> • CGI (20 pc) • Plain sheet (2 pc) 	<ul style="list-style-type: none"> • CGI (20 pc) • Plain sheet (2 pc) 	<ul style="list-style-type: none"> • CGI (20 pc) • Plain sheet (2 pc) 	

Criteria (Shelter)			
Category A	Category B	Categories C + R	
<ul style="list-style-type: none"> • Totally damaged shelter • Shelter uninhabitable • Only option is living in evacuation center or tent • Place of origin (pre-Yolanda) is within the target <i>barangays</i> • Refer to Damage Assessment Guidelines 	<ul style="list-style-type: none"> • Main components like roof/wall completely damaged • Foundations / main structural frames damaged • Structure has been rebuilt but needs to be built back better • Refer to Damage Assessment Guidelines 	<ul style="list-style-type: none"> • Structurally safe, needs support for completion (ie: CGI/doors/windows/flooring) • Needs adequate strengthening (ie: Bracing/anchoring) • Refer to Damage Assessment Guidelines 	

* \$1 = 44.4 PhP ** Community tax certificate

Table 2: Categories of assistance for toilets

	TOILET				
	Totally damaged	Major damage	Minor damage	Vent pipe only	
	1	2	3	4	
CASH TOTAL	Direct build	\$211	\$144	\$21	\$
TRANCHE 1		10,000 PhP + CGI + toilet bowl	6,800 PhP + CGI + toilet bowl	1,000 PhP	
TRANCHE 2		Not applicable	Not applicable	Not applicable	
TRANCHE 3		Not applicable	Not applicable	Not applicable	
MATERIALS TOTAL		<ul style="list-style-type: none"> • CGI (4 pc) • Toilet bowl (1 pc) 	<ul style="list-style-type: none"> • CGI (4 pc) • Toilet bowl (1 pc) 	-	+

Criteria (Toilet)				
Category 1	Category 2	Category 3	Category 4	
<ul style="list-style-type: none"> • Totally damaged toilet • Toilet unusable • No toilet before Yolanda • Refer to Damage Assessment Guidelines 	<ul style="list-style-type: none"> • Roof, posts, walls damaged or destroyed • Septic tank damaged and in need of repair • Needs de-sludging • Refer to Damage Assessment Guidelines 	<ul style="list-style-type: none"> • Roof, posts, walls damaged or destroyed • Pipelines or connections damaged • Septic tank intact • Refer to Damage Assessment Guidelines 	<ul style="list-style-type: none"> • No damage to septic tank or structures • Ventilation pipe missing • Refer to Damage Assessment Guidelines 	

Table 3: Categories of assistance for households in the no-dwell zone of Tacloban City

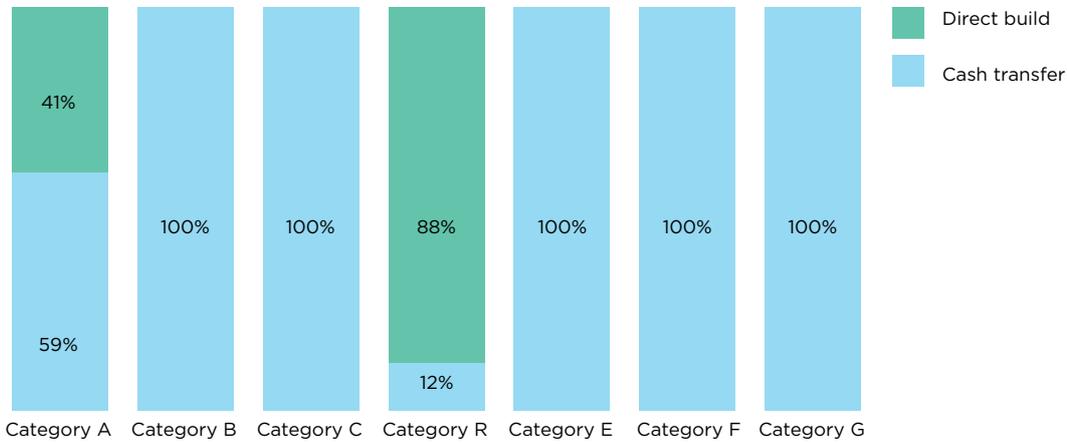
Option	D "Rent to Own" via Community Mortgage Program (CMP)	E Land rental subsidies	F Apartment/House rental subsidies	G Host family support
Duration	<ul style="list-style-type: none"> • Land rental subsidies to cover 2-year period • Shelter and latrine support are owned by household 	<ul style="list-style-type: none"> • Land rental subsidies to cover 2-year period • Shelter and latrine support are owned by household 	<ul style="list-style-type: none"> • Subsidies to cover 2-year period 	<ul style="list-style-type: none"> • Subsidies to cover 2-year hosting rent-free period
Shelter support	<ul style="list-style-type: none"> • Shelter construction support of 33,000 Php • Fixed rate of 14,400 Php to support 2 years of mortgage repayment for land purchase 	<ul style="list-style-type: none"> • Shelter construction support of 33,000 Php • Fixed rate of 14,400 Php to cover 2 years of land rental or as land purchase grant 	<ul style="list-style-type: none"> • Fixed rate of 3,000 Php per month for a maximum of 2 years (maximum total of 72,000 Php) 	<ul style="list-style-type: none"> • Fixed rate of 3,000 Php per month for a maximum of 2 years (maximum total of 72,000 Php) • A minimum of 50 percent must be used to upgrade, repair, or extend the house structure and the remaining 50 percent can be used to support ongoing household expenses.
Additional material for shelter	<ul style="list-style-type: none"> • CGI (20 sheets, or 27 for households with 7 members or more) • Plain sheet (2 pc) 	<ul style="list-style-type: none"> • CGI (20 sheets, or 27 for households with 7 members or more) • Plain sheet (2 pc) 	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • None
WASH	<ul style="list-style-type: none"> • Latrine construction support of 22,000 Php 	<ul style="list-style-type: none"> • Latrine construction support of 22,000 Php 	<ul style="list-style-type: none"> • Case-by-case upon inspection. Maximum of 10,000 Php for WASH installations, repairs, and desludging 	<ul style="list-style-type: none"> • Case-by-case upon inspection. Maximum of 10,000 Php for WASH installations, repairs, and desludging
Additional material for WASH	<ul style="list-style-type: none"> • CGI (4 pc) • Plain sheet (6 pc) • Toilet bowl (1 pc) 	<ul style="list-style-type: none"> • CGI (4 pc) • Plain sheet (6 pc) • Toilet bowl (1 pc) 	<ul style="list-style-type: none"> • CGI (4 pc) • Plain sheet (6 pc) • Toilet bowl (1 pc) 	<ul style="list-style-type: none"> • CGI (4 pc) • Plain sheet (6 pc) • Toilet bowl (1 pc)



Requirements for option D (SHELTER+WASH)	Requirements for option E (SHELTER+WASH)	Requirements for option F (SHELTER+WASH)	Requirements for option G (SHELTER+WASH)
<p>1. Documents: From <u>CRS beneficiary</u>:</p> <ol style="list-style-type: none"> Complete CMP documentation Tax declaration Certificate of occupancy that allows tenant to stay a minimum of 2 years (signed by owner and tenant) <i>Barangay</i> certificate (signed by <i>barangay</i> captain) Cedula <p>2. Project orientation and pre-construction participation</p> <p>3. “Build back safer” DRR training participation</p> <p>4. Hygiene promotion participation</p>	<p>1. Documents: From <u>land owner</u>:</p> <ol style="list-style-type: none"> Copy of Transfer Certificate of Title Certificate of land ownership signed by <i>barangay</i> captain Tax declaration <p>From <u>CRS beneficiary</u>:</p> <ol style="list-style-type: none"> Certificate of occupancy that allows tenant to stay a minimum of 2 years (signed by owner and tenant) <i>Barangay</i> certificate (signed by <i>barangay</i> captain) Cedula <p>2. Project orientation and pre-construction participation</p> <p>3. “Build back safer” DRR training participation</p> <p>4. Hygiene promotion participation</p>	<p>1. Documents: From <u>apartment owner</u>:</p> <ol style="list-style-type: none"> Copy of Transfer Certificate of Title Certificate of ownership signed by <i>barangay</i> captain Tax declaration <p>If the <u>apartment owner is renting the land</u>:</p> <ol style="list-style-type: none"> Certificate of occupancy that allows the apartment owner to stay a minimum of 2 years (signed by landowner and apartment owner) <p>For <u>CRS beneficiary</u>:</p> <ol style="list-style-type: none"> Certificate of occupancy allowing tenant to stay for at least 2 years <i>Barangay</i> certificate (signed by <i>barangay</i> captain) Cedula <p>2. Project orientation and pre-construction participation</p> <p>3. “Build back safer” DRR training participation</p> <p>4. Hygiene promotion participation</p>	<p>1. Documents: From <u>host household</u>:</p> <ol style="list-style-type: none"> Certificate of house ownership Certificate of land ownership (signed by <i>barangay</i> captain) Tax declaration <p>From <u>CRS beneficiary / Hosted household</u>:</p> <ol style="list-style-type: none"> Host household agreement <i>Barangay</i> certificate (signed by <i>barangay</i> captain) Cedula <p>2. Project orientation and pre-construction meeting participation</p> <p>3. “Build back safer” DRR training participation</p> <p>4. Hygiene promotion participation</p> <p>5. Protection training participation</p>

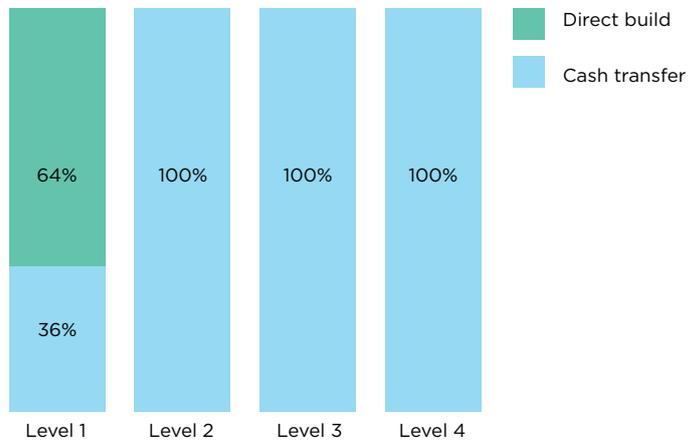
Most of the direct-build intervention was utilized for the “totally damaged” and “land rental” categories, however, the cash approach was used in all categories.

Figure 3. Percentage of shelters delivered via cash-transfer or direct-build modality by category of assistance



After November 2014, a direct-build mechanism was used only for Level 1 toilets and cash transfers were used for the other levels of toilet assistance.

Figure 4. Percentage of toilets delivered using cash-transfer or direct-build modality by category of assistance

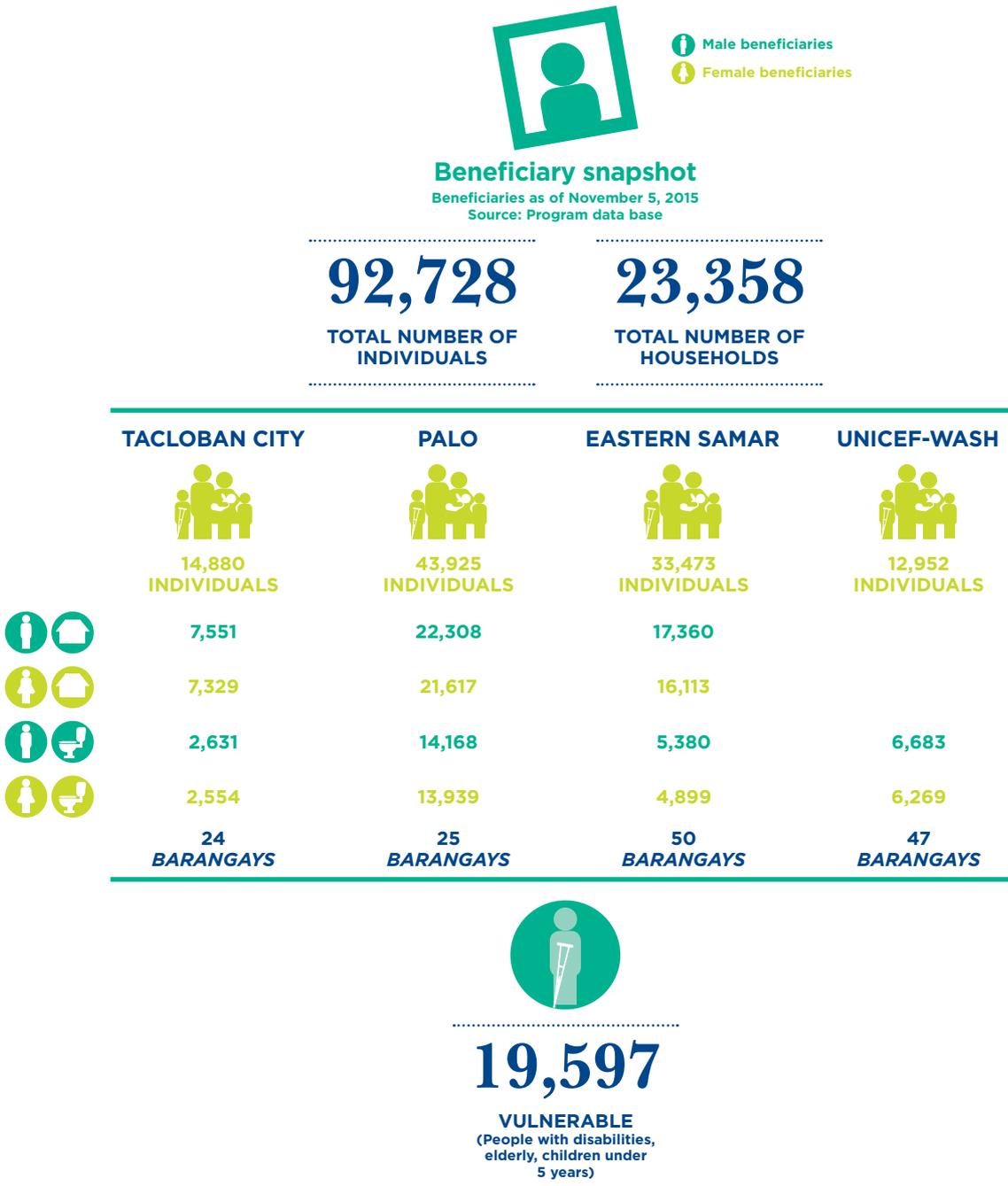


By the end of the program, 80 percent of shelters and 50 percent of toilets had been delivered to beneficiaries using the cash-transfer methodology.

d. Beneficiary snapshot

The CRS Typhoon Haiyan Integrated Shelter/WASH Recovery Program reached the needs of vulnerable and affected communities in 146 *barangays* in 11 municipalities of Leyte and Eastern Samar. In this effort, CRS provided transitional shelter and toilets to over 90,000 people in the area, 51 percent female and 49 percent male. In Palo alone, CRS assisted 10,017 households with transitional shelters, 50 percent of the total target. In Tacloban City, CRS supported 3,300 households and in Eastern Samar 7,352 households with transitional shelters. CRS supported 17,916 families (56,522 people) with toilets in 11 municipalities of Leyte and Eastern Samar. Twenty-one percent of the individuals supported were vulnerable: either physically or intellectually disabled, elderly or children less than five years.

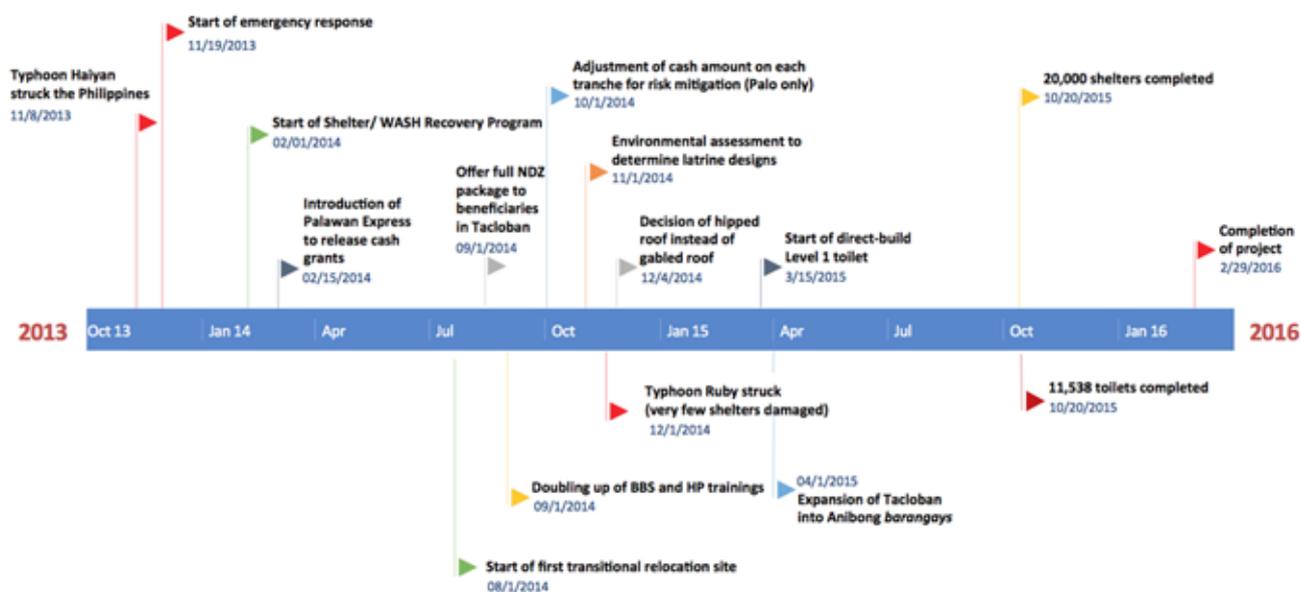
Figure 5. CRS Typhoon Haiyan Integrated Shelter/WASH Recovery Program beneficiary snapshot



e. Timeline of major decisions

This section details the key decisions made during the project, when they were made and why. The following is a timeline of major decisions on shelter/WASH interventions taken during the Typhoon Haiyan response. The emergency phase of the program lasted for approximately 3 months. In February 2014, CRS piloted and ultimately decided upon the use of a remittance agency (Palawan Express) as the delivery method for the cash transfers.

Figure 6: Major decisions in the CRS Typhoon Haiyan Integrated Shelter/WASH Recovery Program (November 2013 to February 2016)



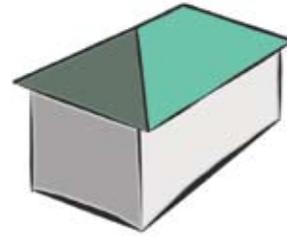
CRS stopped giving cash transfers for Level 1 “totally damaged” toilets in July 2014 due to the challenging environmental context in the target areas, mainly due to high water tables. In November 2014, CRS undertook a comprehensive water, sanitation and environmental site assessment for each Level 1 beneficiary, which included depth of the water table, soil type and highest seasonal flood level. The first direct-build toilets were not begun until March 2015 following the completion of the assessment and pilot constructions.

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CRS stopped giving cash transfers for Level 1 “totally damaged” toilets in July 2014 due to the challenging environmental context in the target areas mainly due to high water tables.

In December 2014, CRS shelters and toilets were put to the test twice: Category 2 Typhoon Ruby with wind speeds of up to 100km per hour and Tropical Storm Seniang whose heavy rainfall flooded communities across Leyte and Samar. Very few of CRS shelters were damaged but the high level of flooding during Tropical Storm Seniang prompted some program managers to discontinue the use of one of the recommended designs, the popular Bohol style. The Bohol style was not elevated and had a base of concrete hollow blocks. This also prompted the adoption of the “hipped roof” design, previously piloted in the program areas, for all CRS direct builds. CRS engineers also encouraged households receiving cash to adopt the stronger hipped roof design with four sides, which some beneficiaries did even though the cash received was not enough to build this type of roof.



In December 2014, CRS changed the roof on the Pablo direct-build shelters from a gabled roof to a hipped roof.



In August 2015, CRS piloted the use of coco lumber panels for walling in the direct-build shelters to respond to community feedback on the use of *amakan* bamboo walling. Beneficiaries felt the *amakan* bamboo walling was of a poor quality, could be seen through at night and let the rain in. The use of the coco lumber panels did not increase the price of the direct build.



CRS piloted the use of coco lumber walling to replace the *amakan* bamboo walling in response to community feedback.

f. Cost efficiency

The cost-efficiency analysis looked at the cost of delivering the cash transfer or direct build in terms of time spent by CRS staff on each approach. The research team designed a formula to calculate the cost efficiency both for the cash transfer and direct build. This produced ratios such as the ‘cost-transfer ratio’ which detailed how much it cost in administration (direct and indirect operating costs) to deliver every \$100 that reached the beneficiary. The cost efficiency formula was applied only on the “totally damaged” (Category A and Level 1) cash transfer and direct-build shelters and toilets. One of the key reasons for not using the cost efficiency formula on all shelter and toilet categories was because both approaches (cash transfer and direct build) were used on “totally damaged” shelters and toilets while all of the other categories and levels were primarily implemented using cash transfers. This formula does not include all costs incurred during the life of the program but the research team used key costs which impacted the effectiveness of the program.

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The cost-efficiency analysis looked at the cost of delivering the cash transfer or direct build in terms of time spent by CRS staff on each approach.

These key costs were those incurred for each beneficiary every time there was a transfer of material or cash and excluded those which were incurred only once during the start-up or life of the program, such as setting up an in-country reliable cash transfer mechanism, for example. These factors were selected based on discussion with key program staff before the study began.

The cost-efficiency formula calculates administrative costs, the institutional arrangement costs (damage assessment, registration, database entry and procurement cost for direct build), monitoring costs, social mobilization and training cost, miscellaneous costs (time spent on releasing material) and cash amount / material and labor cost transferred to the beneficiaries. The time used in the table below is the average time CRS staff spent on each activity based on the interviews conducted with key program staff and management. The hourly rate is also calculated based on the average rate of different program officers and engineers.

Table 4. Cost-transfer ratio of shelters delivered using direct build (Category A)			
Items⁶	Hours	Hourly rate	Total amount
Household damage assessment, registration, database	0.5	\$6.34 ⁷	\$3.17
Time spent on procurement	27 ⁸	\$6.34	\$171.18
Monitoring of shelter	1	\$6.34	\$6.34
Initial training	2	\$5.94	\$11.88
Program sensitization	0.5	\$5.94	\$2.97
Time spent on releasing material	0.17	\$5.94	\$0.99
Total	31.17	-	\$196.53
Total amount of material received by beneficiaries	Php 49,013.5⁹ (\$1,103.91)		
Cost-transfer ratio	18%		

According to the table above, the direct-build program spent \$196.53 in administrative costs to deliver \$1,103.91 to each beneficiary, giving a cost-transfer ratio of 18 percent (196.53/1,103.91). This means that, for every \$100 spent on direct-build shelter beneficiaries, it cost CRS \$18 to deliver the direct-build shelter.

On the other hand, the cash-transfer modality had a 12 percent cost-transfer ratio. CRS spent \$758.11 on cash distribution to beneficiaries and \$93.30 on administrative costs. Thus the cash approach had a lower ratio compared to the direct-build mechanism, making it more cost efficient. One of the key reasons for the high cost-transfer ratio for direct build was the time spent on large quantity supply procurement and hiring of skilled labor.

.....
The cash transfer modality had a 12 percent cost-transfer ratio, against the direct build's 18 percent cost-transfer ration.

6. In the cost-transfer ratio, the research team included the average salary of shelter-WASH engineers, social mobilizer team leader and social mobilizer officer. The hourly amount mentioned above is an average for staff working on each activity.
 7. Hourly rate is based on 22 working days per month and 8 hours per day.
 8. In calculating the cost-transfer ratio for direct-build shelters (Category A) and direct-build toilets (Level 1), the research team used 27 hours to procure one shelter or toilet. This is based on the "Procurement lead time memorandum" where, on average, it took 27 days to procure material.
 9. The average amount for direct-build shelter.

Table 5. Cost-transfer ratio for cash-transfer shelters (Category A)

Items	Hours	Hourly rate	Total amount
Household damage assessment, registration, database	0.5	6.34	\$3.17
Monitoring of shelter	10	6.34	\$63.40
Initial training	2	5.94	\$11.88
Sensitization	0.5	5.94	\$2.97
Time spent on releasing payment	2	5.94	\$11.88
Total	15	-	\$93.30
Total amount received by beneficiaries¹⁰	33,660 PhP (\$758.11)		
Cost-transfer ratio	12%		

The same findings resulted when the cost transfers for toilets were examined. According to the table below, direct build programs spent \$196.53 in administrative costs to deliver \$696.41 to each beneficiary to build a Type 1 toilet, giving a cost-transfer ratio of 28 percent (196.53 / 696.41). This means that for every \$100 disbursed to beneficiaries, it cost \$28 to deliver the direct-build toilet.

Table 6. Cost-transfer ratio for direct-build toilets

Items	Hours	Hourly rate	Total amount
Damage assessment, registration, database	0.5	\$6.34	\$3.17
Time spent on procurement	27	\$6.34	\$171.18
Monitoring of toilet	1	\$6.34	\$6.34
Initial training	2	\$5.94	\$11.88
Program sensitization	0.5	\$5.94	\$2.97
Time spent on releasing material	0.17	\$5.94	\$0.99
Total	31.17	-	\$196.53
Total amount of material received by beneficiaries	30,920.75 PhP (\$696.41)		
Cost-transfer ratio	28%		

The cash-transfer modality for toilets had a lower cost-transfer ratio compared to direct build. The CRS program team spent \$225.20 in cash distribution to the beneficiary and spent \$55.66 in administrative costs to deliver a cash-transfer toilet, leading to a cost-transfer ratio of 25 percent.

Table 7. Cost transfer ratio for cash-transfer toilets

Items	Hours	Hourly rate	Total
Damage assessment, registration, database	0.5	\$6.34	\$3.17
Monitoring of toilet	5	\$6.34	\$31.70
Initial training	1	\$5.94	\$5.94
Program sensitization	0.5	\$5.94	\$2.97
Time spent on releasing payments	2	\$5.94	\$11.88
Total	9	-	\$55.66
Total amount of cash received by beneficiaries	10,000 PhP (\$225.20)		
Cost-transfer ratio	25%		

10. This included transfer to beneficiary and 2 percent commission charge to Palawan Express.

Averaging the cost-transfer ratios of shelters and toilets, the cash-transfer approach is more cost efficient, costing CRS \$18.50 to deliver every \$100 to beneficiaries using cash transfer versus \$23 to deliver every \$100 to beneficiaries using direct build.

\$18.50

COST TO CRS TO DELIVER EVERY \$100 TO BENEFICIARIES USING CASH TRANSFER

\$23

COST TO CRS TO DELIVER EVERY \$100 TO BENEFICIARIES USING DIRECT BUILD

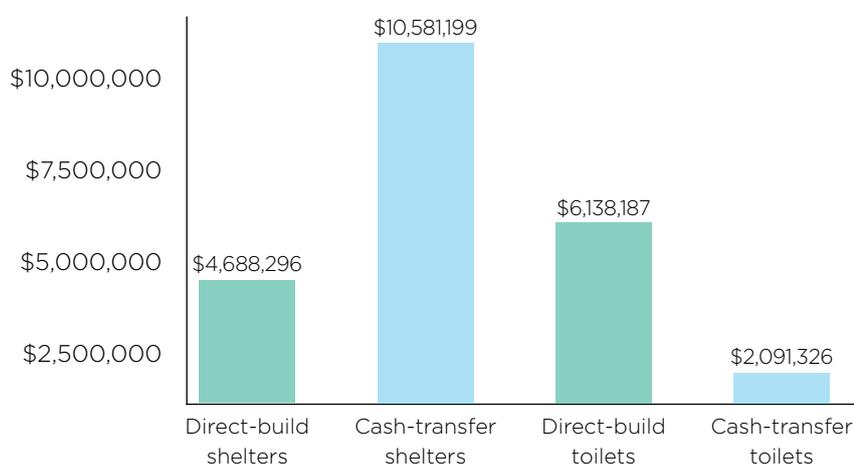
g. Cost effectiveness

The cost effectiveness section of the study compares the total program cost with the magnitude of the outcome, i.e. the extent to which the program objectives—such as the number of shelters/toilets constructed—were achieved.

A comparison of unit costs for a direct-build versus a cash-transfer “totally damaged” shelter and toilet is below. When unit costs are compared, the same results can be achieved more cost effectively through the cash transfer than the direct build.

Table 8. Unit cost of a Category A “totally damaged” shelter and Level 1 “totally damaged” toilet for direct build versus cash transfer				
	Totally damaged shelter		Totally damaged toilet	
Unit cost	Direct build	Cash transfer	Direct build (average of 3 different designs)	Cash transfer ¹¹
	\$1,034 (includes labor)	\$697 + \$225 in materials (CGI and plain sheets)	\$652 (includes labor)	\$464 + \$53 in materials (CGI and a toilet bowl)

Figure 7. Amount spent by CRS on cash transfer versus direct build by unit cost



In total \$12.6 million was spent on cash transfers¹² to beneficiaries for shelters and toilets. CRS spent \$10.8 million to directly build transitional shelters and toilets.

11. In the CRS UNICEF program, the amount of the cash transfer to rebuild a “totally damaged” toilet was \$196 plus \$89 in materials.

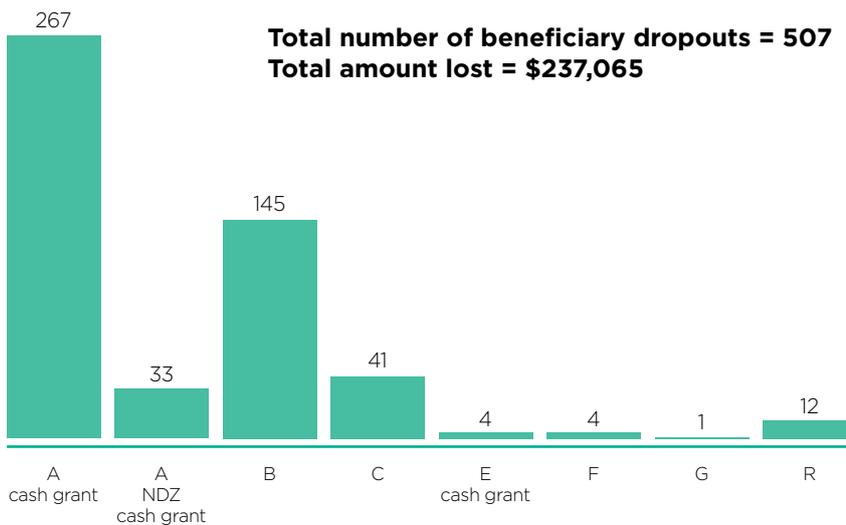
12. This amount only covers the cash transfer to beneficiaries directly in different shelter and toilet categories through Palawan Express.

h. Cash transfer lost due to beneficiary non-compliance

Another important cost-effectiveness consideration of cash transfer is the beneficiary use of the money for intended purposes. This section is not referring to those households that saved money distributed through cash transfer by contributing sweat equity or negotiating cheaper prices; it is referring to beneficiaries who were dropped from the program due to non-compliance with the shelter/ toilet requirements. Over 600 beneficiaries were dropped from the program after receiving the first tranche of the cash transfer. In total, dropped beneficiaries accounted for \$281,195 with an average of \$366 per beneficiary. For every \$100 spent using the cash-transfer approach, 97 percent was used by beneficiaries to build shelters and toilets. An average of \$3 (or 3 percent) of every \$100 spent delivering cash transfers did not get invested into shelter and toilet construction by beneficiaries. Dropouts formed only 3 percent of the overall spent in large part due to the program's use of strong risk-mitigation strategies (see *Risk-mitigation strategies*, Page 25, for more details). This 3 percent dropout rate was experienced in a program that chose a mixed methods (direct build and cash transfer) approach in order to mitigate such losses; therefore it can be assumed that the dropout rate would have been greater if CRS had relied solely on a cash-transfer approach.

3%
OF BENEFICIARIES
DROPPED OUT

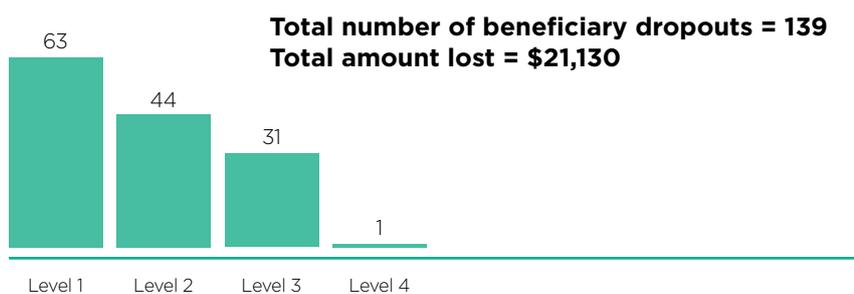
Figure 8. Total dropouts from the shelter assistance by category



A total of 507 shelter beneficiaries and 139 toilet beneficiaries were dropped from the program after the first tranche of funds were disbursed. The majority of dropouts were from the “totally damaged” categories (Category A and Level 1), suggesting that beneficiaries may have found it difficult to complement the cash transfer with their own funds or labor. It also could suggest a potential weakness in the cash-transfer design because it did not adequately respond to the needs of poorer beneficiaries. Over a quarter (28 percent) of the shelter dropouts were from the “major damage” Category B. CRS staff suggested that these dropouts were mostly families with larger concrete homes that did not adequately plan the budget that would be needed to repair the whole house. Because they were overambitious, they could not complete the shelters within the set timeframe and were therefore dropped from the program.

.....
Those with larger concrete homes did perhaps not adequately budget for the extent of repair needed and thus could not complete their shelters within the timeframe and were therefore dropped from the program.
.....

Figure 9. Total dropouts from the toilet assistance by category



“Major damage” and “minor damage” (Levels 2 and 3) dropouts combined represented 54 percent of the total dropouts for toilets. Most can be attributed to the shelter dropouts. In an integrated shelter/WASH recovery program, if a beneficiary is dropped from the program due to non-compliance with shelter cash tranche requirements, then he/she would also be dropped from toilet assistance. CRS staff interviewed suggested how the cash amounts could be changed to better mitigate the risk of dropouts as well as speed up completion schedules (See *Recommendations*, Page 28).

.....
CRS staff interviewed suggested how the cash amounts could be changed to better mitigate the risk of dropouts.

i. Risk-mitigation strategies

Risk-mitigation strategies for direct build

According to the focus group discussions and key informant interviews with staff and beneficiaries, there were common trends of risks for the direct-build approach. Throughout program implementation, CRS staff/contractors proactively mitigated risks by improving or changing aspects of the programming.

Table 9. Risk-mitigation strategies for direct builds

Issue	Risk-mitigation strategy	Details
Delays in procurement of toilet materials/ septic tanks/ CGI sheets/ coco lumber	Distribution plans	Distribution plans list all the materials needed according to BOQs over the life of the project, by week, by program, and when they will be delivered to communities. Distribution plans were introduced late in the project. If they had been implemented at the beginning of the project they would have allowed procurement of materials to begin in the first months of the project leading to fewer delays when materials were badly needed.
Beneficiaries not occupying their direct-build shelters	CRS policy	CRS created a policy that only those who were occupying their direct-build shelter would receive the toilet.
Quality of materials	Improved warehousing techniques	CRS ensured proper warehousing techniques to store materials so that they did not rot or lose quality.
	Quality control engineer	When dealing with a materials warehouse of this scale it is important to hire a quality control engineer to monitor the quality of materials delivered to the sites and warehouse.

Risk-mitigation strategies for cash transfer

According to the discussions and interviews, common trends of risks arose for the cash-transfer approach. Throughout program implementation, CRS staff/contractors proactively mitigated these risks or improved/changed aspects of their programming. The strategies for implementation listed below shed light on the variety of approaches for mitigating risk factors in a cash-transfer approach.

Table 10. Risk-mitigation strategies for cash transfers

Issue	Risk-mitigation strategy	Details
Delay in beneficiary completion of requirements for each tranche	Include a specific timeframe in the memorandum of agreement with beneficiaries	<p>Added a timeframe to the MOA to make beneficiaries aware and accountable. Issued disqualification notices if requirements were not met within a specified timeframe.</p> <p>Ensured a visible presence in the community, especially following a cash-transfer release.</p> <p>Reported non-compliance to <i>barangay</i> council.</p>
Proper encouragement and motivation to complete construction	Clustering / cluster leaders	Clustering (in rural areas) of neighbors created strong peer pressure.
Sensitization and mobilization: creating a shared understanding of the project and its sustainability	<p>Pre-construction meetings, regular community meetings, constant monitoring and follow-up</p> <p>Behavior change communication methods</p>	<p>Pre-construction meetings (including “build back safer” and hygiene promotion) were held before each tranche was released to promote participation, help beneficiaries properly understand how to reconstruct or repair their shelter and toilet, and ask any questions on what was expected of them. The trainings were very practical and included demonstrations on installation, proper guidelines, etc.</p> <p>Palo created a “build back safer” music video and Samar created a “build back safer” jingle to help participants remember the message and the techniques. These behavior change communication methods reinforced knowledge/skills that resulted in the adoption of the “build back safer” techniques.</p>
Navigating difficult community situations and promoting ownership	Participatory decision-making in the community through use of project implementation committees	<p>Decision-making should be participatory. The results of meetings should be known and community members involved, thus creating ownership of the process.</p> <p>Ensures that information is reported to CRS and <i>barangay</i> officials about the misuse of funds, unqualified beneficiaries, theft, land disputes, etc.</p>
Misuse of money by beneficiaries (funds spent on debt, livelihoods, food, appliances, travel, and other basic needs)	Close monitoring by foremen, engineers, and social mobilizer officers, and field assistants	<p>Frequent monitoring by social mobilization officers, foremen and engineers ensured a strong visible, presence in the communities.</p> <p>It is important to choose an appropriate day to release funds: not before festival days or weekend. Some teams reported it was best to release funds on a Monday morning.</p> <p>Make sure beneficiaries buy materials on the same day as the cash release. High CRS/staff visibility on the days after the tranche is released encourages beneficiaries to buy materials immediately.</p>
Beneficiaries overseeing construction	Manuals/guides/ BBS techniques/ completion checklists	By equipping beneficiaries with manuals and guides they were able to follow the procedures. Also, the engineers’ checklist provided the beneficiaries with a list of what was expected. Beneficiaries were aware that without proper completion of the checklist, the next tranche could not be released; therefore, they had to follow and complete every step.

Table 10. Risk-mitigation strategies for cash transfers

<p>Lack of technical knowledge in construction</p>	<p>Monitoring</p> <p>Training of carpenters (CRS and non-CRS)</p> <p>Hire a shelter technical advisor</p>	<p>Frequent visibility of foremen/engineers for on-the-spot technical advice and monitoring.</p> <p>In Samar, non-CRS carpenters were also trained in BBS techniques in informal seminars by foremen and engineers.</p> <p>It is also key to hire enough technical staff to oversee the process and provide feedback on issues of quality control and technical aspects of building back safer.</p>
<p>Beneficiaries procuring good quality materials</p> <p>Budgeting for construction</p>	<p>Provide or agree on appropriate bill of quantity</p> <p>Household shelter planning</p> <p>Market mapping</p>	<p>Provide beneficiaries with BOQs: lists of construction materials—as an overall guide on which materials to procure and to assist families in budgeting.</p> <p>For more complex reconstruction and repair, beneficiaries needed to provide their own BOQ to engineers for approval. This exercise controlled budgets, improved beneficiaries’ ownership, and helped them plan ahead.</p> <p>It was helpful for CRS to pre-map the local market and bring the BOQs and list of materials to local suppliers. These suppliers were then accredited by CRS and the list was given to beneficiaries to give them an overview of options in the market and to make it easier for them to buy good quality supplies.</p>
<p>Difficulties with Category B/C (repairs) using concrete and masonry</p>	<p>Adjust BBS techniques for masonry and adapt the engineer’s checklist depending on the style of the house</p> <p>Household shelter planning</p>	<p>The content of the BBS construction techniques training for beneficiaries needed to be adapted to include masonry construction.</p> <p>The household planning with engineers provided technical help to beneficiaries through a specified technical design, individual budgets and requirements for the rebuilt or repaired shelter, and ensured repairs met “safe, adequate and durable” requirements. This took extra time to monitor to ensure high quality.</p>
<p>Distribution of cash</p>	<p>Palawan Express</p>	<p>This service meant CRS staff did not have to personally distribute cash.</p> <p>Segregation of duties (Finance releases transaction codes) limits fraud.</p> <p>100 percent of beneficiaries were satisfied with this service, although some complained of long lines. They said it was very efficient and they did not have any safety concerns.</p>
<p>Land issues</p>	<p>Hire a paralegal/ community organizer with a legal focus</p>	<p>Hire a paralegal to deal with land tenure issues, the certificate of occupancy notarization, creating a legally binding MOA, other binding agreements, handling disputes, and to settle legal matters.</p>
<p>Reaching a wide audience for hygiene promotion</p>	<p>Segregated hygiene promotion (for children, elderly, women, men, etc.)</p>	<p>The hygiene training should promote the use and maintenance of toilets, target the whole household and promote handwashing, illness prevention, etc.</p> <p>In Burauen, hygiene promotion had a lasting impact on the community and both FGDs mentioned larger behavioral changes due to the social mobilization of the program.</p>
<p>Social aspects can hinder/enable project</p>	<p>Adapt approaches for urban/rural communities</p>	<p>Get leaders involved, give beneficiaries a clear explanation of the process and of expectations, be flexible and adapt to feedback.</p> <p>Urban settings need a longer lead time for social mobilization and require a more focused effort on sensitization and community preparedness before beginning the project.</p>

RECOMMENDATIONS

Based on discussions and interviews with CRS staff and beneficiaries, the research team recommended changes to the categories of assistance in terms of cash-transfer amounts and which categories would be better delivered using direct build. These changes are suggested because they will further mitigate the risks of non-compliance and money lost due to dropouts as well as speed up the timeframes for completion.

Table 11: Recommendations for shelters by category of assistance

	SHELTER			
	Totally damaged	Major damage	Minor damage	Roof sheet repair only
	A	B	C	R
SUPPORT	\$696	\$696	\$422	\$422
MATERIALS TOTAL	<ul style="list-style-type: none"> CGI (20 pc) Plain sheet (2 pc) 	<ul style="list-style-type: none"> CGI (20 pc) Plain sheet (2 pc) 	<ul style="list-style-type: none"> CGI (20 pc) Plain sheet (2 pc) 	<ul style="list-style-type: none"> CGI (20 pc) Plain sheet (2 pc)
RECOMMENDATIONS	<ul style="list-style-type: none"> Increase to \$845 to build hipped roof design Provide a BOQ to all beneficiaries Direct build for vulnerable families with low capacity 	<ul style="list-style-type: none"> Combine category with "totally damaged" Household planning is necessary if house is too big: visit, decide what portion needs to be completed for checklist 	<ul style="list-style-type: none"> Combine with "roofing only" category Increase to \$633 	<ul style="list-style-type: none"> Combine with "minor damage"

	SHELTER			
	"Rent to Own" via Community Mortgage Program Support for affected household to move to a safe location and have potential to own land via CMP/NHA system.	Land rental subsidies Support for affected household to move to a safe location.	Apartment/House rental subsidies Support for affected household to rent a safe, appropriate, durable unit.	Host family support Support can be extended to households who find new host households OR Support households already hosting households
	D	E	F	G
SUPPORT	<ul style="list-style-type: none"> Shelter construction support of \$697 \$304 for two years of mortgage repayment for land purchase 	<ul style="list-style-type: none"> Shelter construction support of \$697 \$304 for two years of land rental or as land purchase grant 	<ul style="list-style-type: none"> \$63 per month for two years (maximum total of \$1,520) 	<ul style="list-style-type: none"> \$63 per month for two years (maximum total of \$1,520)
RECOMMENDATIONS	<ul style="list-style-type: none"> Option not used, remove category 	<ul style="list-style-type: none"> Direct build, do not use cash-transfer approach 	<ul style="list-style-type: none"> 3 months of inspection and observation before releasing more money Check in every six months Do not give lump sum; give subsidies in tranches Strong social preparation needs to take place before permitting this option 	<ul style="list-style-type: none"> More monitoring/ closer assistance with repairs Check in every few months Assist with household disputes and conduct more seminars between host family and guests to avoid conflicts A detailed memorandum of agreement (signed by beneficiaries and host family) would be useful for pre-empting issues about privacy and should also include agreed statements about the expenses of host family and guests

Table 12. Recommendations for toilets by category of assistance

	TOILET			
	Totally damaged	Major damage	Minor damage	Vent pipe only
	1	2	3	4
CASH TOTAL	Direct build	\$211	\$144	\$21
MATERIALS TOTAL		<ul style="list-style-type: none"> • CGI (4 pc) • Toilet bowl (1 pc) 	<ul style="list-style-type: none"> • CGI (4 pc) • Toilet bowl (1 pc) 	-
RECOMMENDATIONS	<ul style="list-style-type: none"> • Direct build or increase cash transfer to \$633 for high water table areas. If there is time for at least 5 months of social preparation and training on construction, then use a lower cash-transfer amount (\$196 plus \$89 in materials) encouraging beneficiary contribution. 	Keep at \$211	Keep at \$144	Combine with "minor damage"

CRS staff recommended that totally damaged toilets should be supported using direct build because of the technical skill required in matching the appropriate design with the water table and flood height so as not to aggravate groundwater contamination and further harm public health. Staff recommended that the cash amount should be increased to \$633 for high water table/ flood-prone areas and accompanying that there should be at least 1 month of social preparation before the release of the cash. This in-depth social preparation and mobilization should include community meetings orienting beneficiaries on the reasons for using different designs (water contamination, public health); construction of one demonstration toilet; detailed construction trainings with manuals for beneficiaries and carpenters; constant hygiene promotion before, during and after construction; and enough engineering staff for constant monitoring throughout the construction process. If cash grants are used for Level 1 "totally damaged" toilets, the recommendations below describe how the first and second cash transfers should be implemented to ensure quality construction:

The first cash transfer should include the following items for the inspection checklist:

1. Excavation of trench for septic tank
2. Construction of septic tank base floor, inner walls (chambers), waterproof plastering and pipe fittings
3. Digging of area for subsoil infiltration system and laying gravel and sand layer with right slope
4. Preparation of slots for effluent piping

Before transferring the second tranche, the results of the first tranche have to be assessed and approved by the engineer in order to address key structural problems which affect the quality of the septic tank functioning. The inspection checklist before the second cash transfer should include:

1. Construction of the toilet (apron, fitting of toilet bowl, connections and superstructure)
2. Covering septic tank and connecting toilet to it.
3. Laying perforated pipe for subsoil infiltration system and covering it with a geotextile and soil.

.....
CRS staff recommended that totally damaged toilets should be supported using direct build because of the technical skill required in matching the appropriate design with the water table and flood height so as not to aggravate groundwater contamination and further harm public health.

CRS staff also recommended that plastic water-tight septic tanks be provided to beneficiaries in the Level 1 “totally damaged” category in high water table/ flood-prone areas. Plastic septic tanks are cheaper and watertight unlike those made of concrete hollow block and cement. However, the plastic septic tanks need counterweights made from cement and concrete hollow block installed to keep them from shifting or floating when the waters rise.

.....
Plastic septic tanks are cheaper and watertight but need counterweights to keep them from shifting or floating when the waters rise.
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Recommendations for further research

During the course of the research and writing of this report, many opportunities arose for further research that were beyond the scope of this study. CRS recommends that further research focuses on:

- The differences in the urban and rural social contexts and how these impact cash-transfer programming
- Effective behavior change communication methods that can enhance the quality of construction using a cash-transfer modality for shelters and toilets
- Calculation and comparison of opportunity costs for beneficiaries in the cash-transfer approach, i.e. the time spent in procuring materials, the average amount spent on additional “top up” funds, the average amount spent on labor, the average amount spent on materials

CONCLUSIONS

Mixed-methods approach allows for flexibility

To ensure the needs of the most vulnerable beneficiaries are met while promoting strong beneficiary participation and ownership of the program, it is important to use a mixed-methods approach of both cash transfer and direct build. It was very important for beneficiaries to have choices. The provision of alternative options allowed for the context-specific needs of beneficiaries to be met. It also assured a higher rate of beneficiary satisfaction, since they had a greater sense of ownership of their shelter/toilet decision.

CRS staff reported that direct builds were the best option during the emergency phase because of 1) the limited availability of materials/ labor and 2) the priorities of beneficiaries at that time to use cash for food and basic needs, not shelter.

Immediately after the typhoon, materials were not available, so direct build was the only option. In the recovery phase, there were many suppliers, so cash transfer was the best approach. Procuring labor/materials is sometimes more difficult for those with vulnerabilities. In general, beneficiaries can negotiate prices better than CRS because they can talk directly with suppliers. Additionally, beneficiaries can access informal markets where they may not be required to pay value-added taxes. They can also use their own materials, such as coconut trees and save money for other basic needs. For vulnerable urban populations, CRS staff reported that direct build was the best approach since it can be managed by engineers for quality control, ensure the use of the BBS techniques, hit the target timeframe faster, and families can directly transfer to their houses.

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For vulnerable urban populations, CRS staff reported that direct build was the best approach.
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Through the cash-transfer approach, beneficiaries learnt a lot, which will have a lasting impact. These learnings were not only limited to BBS and hygiene trainings but also included how to budget effectively for their shelter/toilet construction, where to buy materials, and how to construct a safer shelter/toilet. According to program staff, the cash-transfer process made beneficiaries more resilient by building strong relationships between neighbors and community members as they supported each other to achieve the goals. They were buying materials in bulk through the clustering system and also shared price and material-quality information with other community members for better results. The cash option also supported the local markets and vendors who were also recovering from the impact of the typhoon and this helped infuse cash into the local market to revitalize the local economy.

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The cash-transfer process made beneficiaries more resilient by building strong relationships between neighbors and community members as they supported each other to achieve the goals.
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Beneficiary preference

Beneficiary preference aligned with the type of assistance they received. In the direct-build focus group discussions, all beneficiaries preferred direct build and would not have changed to cash transfer since direct build was the best approach for their situation.

- Respondents in the majority of direct-build discussions said they chose direct build because they could not add in additional funds
- In the majority of discussions with direct-build beneficiaries, respondents said they urgently needed a house and direct build was more timely
- They said they preferred direct-build because they did not need to worry about budgeting (misusing money), finding labor, buying materials—it was “hassle free”

All cash-transfer beneficiaries who participated in the focus group discussions thought cash transfer was the best approach because they could choose the best quality materials to ensure a durable, high-quality home. Beneficiaries reported high satisfaction with pre-construction meetings because they learned new skills in construction, budgeting and materials procurement (useful for future applications), and they felt more empowered by the new knowledge. Beneficiaries reported high satisfaction with Palawan Express services. They all said they had no security issues and receiving the money at Palawan Express was an easy process. Beneficiaries cited the helpful monitoring and guidance by engineers and foremen. They said the engineers were “strict” and would double check that everything was done properly. The foremen gave advice and guidance throughout the construction process.

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“We have an increased level of ownership in the project due to the cash approach. We felt trusted, responsible, empowered, dignified, and proud to be able to construct our own shelter.”
.....

Female cash grant focus group discussion respondents from Palo
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Cost efficiency

Cash transfer was a more cost-efficient approach. For every \$100 spent on the beneficiary, it cost \$18.50 for CRS to deliver the cash-transfer approach against \$23 to deliver the direct-build approach. This was primarily due to the time it took to procure materials for thousands of beneficiaries for the direct-build approach.

Cost effectiveness

Cash transfer was a more cost-effective approach when the unit costs, completion of targets, and dropouts were compared between each approach. Per unit, CRS spent less on shelters and toilets using a cash-transfer approach than direct build. CRS was

able to complete all targeted 20,000 shelters and toilets within 20 months over a large geographic area largely due to the scalability of the cash-transfer approach. For every \$100 spent using the cash-transfer approach, 97 percent was used by beneficiaries to build shelters and toilets. An average of \$3 (or 3 percent) of every \$100 spent delivering cash transfers did not get invested in shelter and toilet construction by beneficiaries. In these cases, beneficiaries did not comply with the requirements to receive subsequent cash tranches therefore did not complete the program. CRS used a mixed-methods approach of both direct build and cash transfer to mitigate the risk of dropouts, but findings suggest the overall effectiveness in terms of costs-per-completed-targets would have been greater if CRS had purely relied on a cash-transfer approach.

Social mobilization

Social mobilization was a key factor in the success of the cash-transfer approach especially when dealing with land conflict issues, complicated socio-political dynamics, and no-dwell zone beneficiaries. Pre-construction trainings on BBS techniques and hygiene promotion encouraged construction behavioral changes and promoted inclusive learning and capacity building. Each group of beneficiaries (men/women, cash/direct, shelter/toilet) expressed satisfaction with the pre-construction community meetings. Learning about BBS techniques and hygiene had a huge impact on the overall construction process. Each group mentioned that the techniques were new ideas they had not learned before and they had learned how to build durable homes/toilets. They expressed pride in learning these new skills and said they could monitor labor (both cash/direct) by following these techniques. At the pre-construction meetings they were given a sketch of the plan and each *barangay* posted this information. This made the project sustainable with a longer-term impact.

In every focus group discussion with engineers, they said their job duties had expanded beyond technical guidance; they also needed to be social mobilizers. The homes built all withstood Typhoon Hagupit (2014, known locally as Typhoon Ruby) and the families felt safe in their homes. This is mostly accredited to the use of BBS techniques. The homes were durable due to the monitoring of engineers during construction. One beneficiary said: “The engineer was very strict. If they saw something wrong they would make them reinstall it.”

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Engineers said their job duties expanded beyond technical guidance; they also needed to be social mobilizers.
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Environmental site assessments

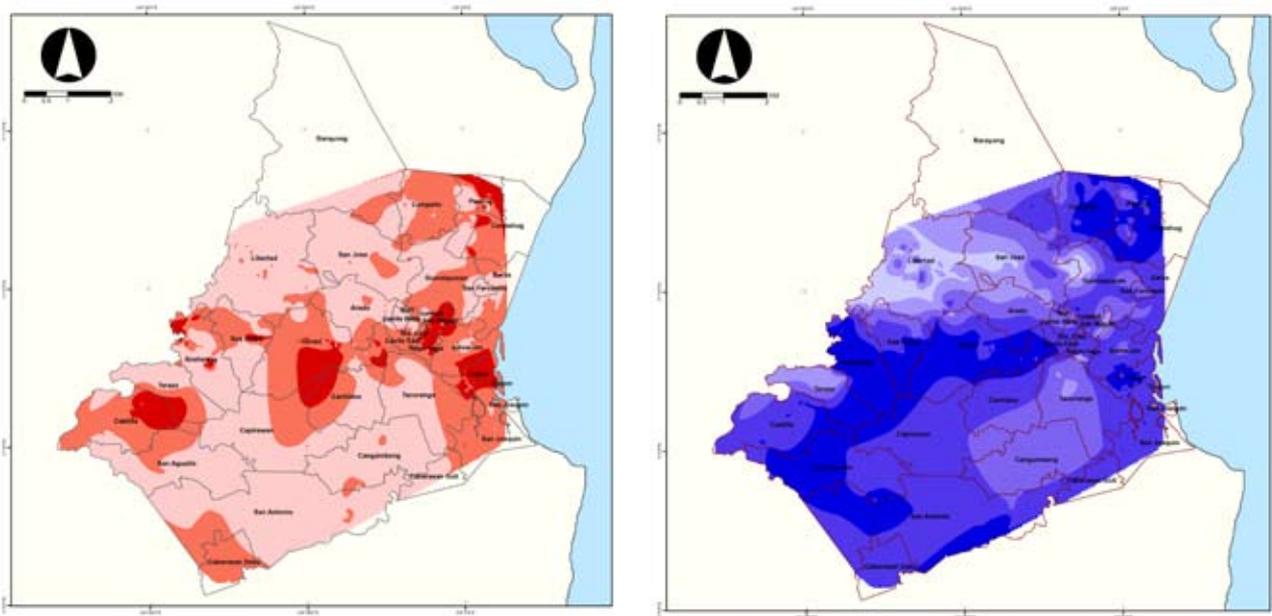
CRS staff interviewed recommended that it was important to assess local environmental conditions before deciding which design of shelter, toilet, and drainage system to use. Many of the program areas were flood-prone up to waist level, with shallow ground water tables between a few centimeters and 1.6 meters below the natural ground. This has serious implications for the type of shelter, septic tank and subsequent subsoil infiltration system designs most appropriate for an area. Environmental assessments to determine the appropriate toilet and septic tank type did not begin in the project until November 2014 which made it difficult to truly integrate the shelter and toilet construction and have them both completed simultaneously.

Additionally, the environmental assessment was important to consider for the appropriate shelter type. When given the choice, some households

wanted the Bohol model since it is built with a cement block base. Many households viewed houses made from cement as stronger and as having a better “status” than those made of *amakan* and coco lumber. However, the ground-level Bohol design is not flood-resistant and, in flood-prone areas, did not meet technical requirements. Beneficiaries in Tacloban said it was very important to consider the water level/environmental conditions for the shelter and toilet design. If the area was flood-prone, then it was best to use the Pablo design. The maps below show the prevalence of the high water table and flood-prone conditions in the area CRS covered in the Palo municipality. Approximately 80 percent of households in Palo had water tables higher than 1.72 meters.

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80%
**OF PALO HOUSEHOLDS HAD
 WATER TABLES ABOVE 1.72m**

Figure 10. Maps of the water table and highest seasonal flood levels in Palo municipality



Data came from environmental site assessment measurements per household conducted from November 2014 through April 2015. If water, soil and environmental assessments had been conducted at the same time as the damage assessments while registering beneficiaries, then the program would have been more cost-efficient and cost-effective in meeting targets and alleviating time constraints.

In UNICEF-funded areas however, where toilet construction was not integrated into a shelter recovery program, the cash-transfer modality worked well. Beneficiaries appreciated the approach because they learned new skills in proper toilet construction and budgeting, felt more empowered as a result, and became more aware on the importance of proper sanitation. CRS staff implementing the UNICEF-funded project felt that cash transfer for toilet construction was the best approach because it was hassle-free and there were fewer delays due to the procurement of materials than the integrated shelter/WASH programs were experiencing. Both CRS staff and beneficiaries reported that it allowed them to train more workers locally, building the capacity in proper toilet construction (masonry, plumbing and carpentry) in the area.

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**Both CRS staff and
 beneficiaries reported
 that the cash-transfer
 allowed them to train more
 workers locally, building
 capacity in proper toilet
 construction in the area.**

CRS hopes that this body of work will contribute greatly to the field of post-disaster shelter/WASH recovery interventions and help those practitioners who are considering cash-transfer and in-kind/direct-build modalities.

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